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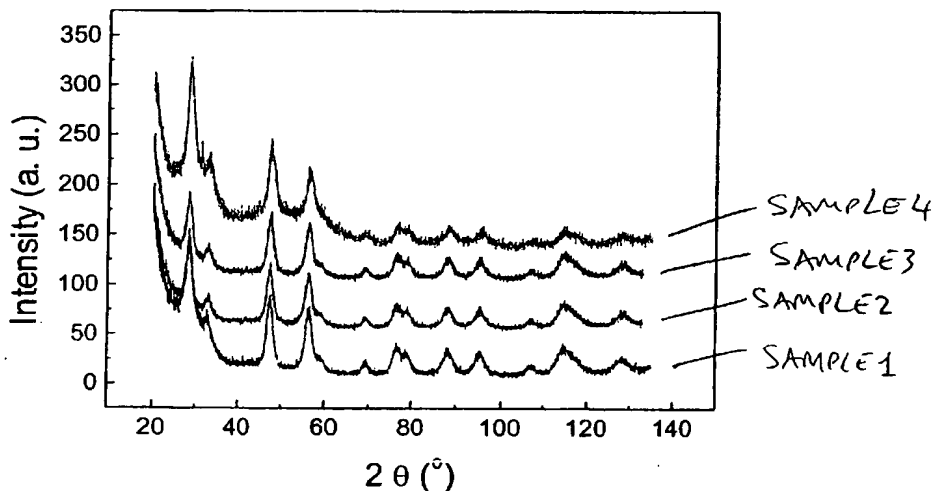
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(54) Title: METHOD FOR PREPARING NANOPARTICLES COMPRISING CERIUM OXIDE AND ZIRCONIUM



(57) **Abstract:** This invention provides a method for preparing nanoparticles comprising cerium oxide and zirconium and having a narrow size distribution. The method comprises providing a first aqueous solution comprising zirconium oxychloride and providing a second aqueous solution comprising a first component which is either cerium nitrate or hexamethylenetetramine. The second aqueous solution is added to the first aqueous solution to form a first mixture. A third aqueous solution comprising a second component which is either cerium nitrate or hexamethylenetetramine, and which is different from the first component, is added to the first mixture to form a second mixture. The second mixture is maintained at a temperature no higher than about 320 °K to form nanoparticles. The nanoparticles are then separated from the second mixture and sintered in air at a temperature ranging between about 500° and about 1100°C. The nanoparticles obtained by the method of the invention are at least in part crystalline.